

## NASA Seeks New Ideas to Reduce Space Transportation Costs

by Deana Nunley

In its continuing effort to dramatically reduce the cost of access to space, NASA is seeking proposals for new and innovative reusable launch vehicle technologies.

The Marshall Center this week issued a NASA Research Announcement soliciting proposals for development and demonstration of advanced reusable technologies for future space transportation systems. Proposals are due in early May.

By the end of this decade, industry is expected to make a decision on whether to begin development of a full-scale, commercially developed and operated

reusable launch vehicle. NASA's continuing goal, through technology development — in flight demonstrations as well as ground-based research — is aimed at increasing U.S. competitiveness in the worldwide commercial space transportation market.

Next-generation launch vehicles will have to be highly reusable in order to drive down the cost of space transportation," said Uwe Hueter, manager of Marshall Center's Advanced Reusable Technologies project, which is part of NASA's Advanced Space Transportation Program. "Spacecraft of the future will be similar to an airplane — durable, long-life vehicles that require very little

maintenance," he said.

The NASA Research Announcement calls for demonstration of technologies focused on meeting the needs of reusable launch vehicles in both the near term and beyond 2000. Core technologies that could support a wide range of future space transportation needs will be developed through a continuous effort with business and academia.

NASA's industry partners will develop and demonstrate airframe and propulsion systems technologies for advanced Earth-to-orbit systems and upper stages. Airframe systems technologies will include structures and materials, avionics,

*See Lower-Cost Access on page 3*

## Marshall Engineers Help Students Discover Math, Science

by Steve Roy

Involving students in the process of discovery rather than asking them to accept facts at face value is the focus of a Marshall-supported education initiative designed to aid science and mathematics teachers at Madison County's Sparkman High School.

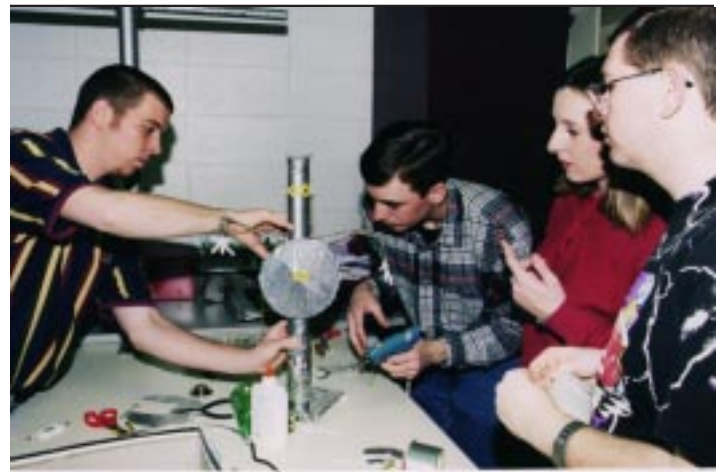
"Teachers are continuously striving to apply new and better teaching methods," explained Belinda Cross of Sparkman High School. "With NASA's help we've developed an approach to science and mathematics involving students in the discovery of ideas rather than asking them to accept and prove the ideas without understanding their basis. We believe this approach facilitates learning while it builds self-motivated and independent thinkers."

"Sparkman science students worked with information about the meteoroid and orbital debris environment to learn how this environment affects spacecraft or satellites," said Jody Minor of Marshall Center's Space Environments and Effects Program Office. "Students learned how to design space structures against the harsh environment of space, and how the space environment affects the Earth's atmosphere. We helped develop a curriculum that engaged students in creating ways to 'clean' space of orbiting debris while teaching them physical science," said Minor.

The mathematics course introduced students to mathematical concepts used in calculating the velocity and acceleration of space debris and spacecraft.

The joint Marshall-Sparkman effort began after Sparkman teachers submitted an unsolicited proposal to Marshall Center to develop a high-school level space environments and effects curriculum. The teachers polled the students and found that a majority of them were interested in the meteoroid and orbital debris environment. The Space Environments and Effects Program, managed at Marshall, joined enthusiastic Sparkman teachers to develop a quality space environment curriculum.

*See Students on page 4*



Sparkman High School students (left to right) Robin Bullock, Pat McGrath, Shea Reese, and Geoff McElroy work together developing an orbital debris "cleaner" during Huntsville's recent Space Week activities.

*Photo by Terry Leibold*

# Marshall Honored For Commitment To Diversity

**M**arshall Center has been selected as the first National Society of Black Engineers (NSBE) Golden Torch Award winner in the category of Government Diversity Leadership. Center Associate Director Sidney P. Saucier will accept the award for Marshall at NSBE's 24th annual national convention during its Golden Torch Award ceremony, March 27, in Anaheim, Calif.

The Golden Torch Award ceremony will highlight the accomplishments of African American engineers and efforts of corporations with a demonstrated commitment to diversity.

NASA Administrator Daniel S. Goldin has expressed his commitment to making NASA the model of excellence for other agencies and the private sector with regard to diversity in the workforce. Marshall will be cited by NSBE for its effort in working toward meeting that commitment.

"This award is especially significant since Marshall was nominated by officials from the local NSBE chapter at the Center," said Charles Scales, Marshall's Equal Opportunity Office director. "I believe it shows recognition on the part of the employees that Marshall Center is committed to workforce diversity."

The NSBE is a community service technical association linking the African American community and the world of engineering and technology. NSBE represents more than 10,000 African American engineers, students and technical professionals. Increasing the number of culturally responsible black engineers who excel academically, succeed professionally and positively impact the community is NSBE's mission. NSBE plans to hold the Golden Torch Award ceremony annually.

# Marshall's Women 'Pioneers' Blazed Trail of Accomplishments

*Editor's note: The month of March observes National Women's History Month as well as the 150th Anniversary of the Women's Right Movement. The following article is the third of a three-part look at examples of key contributions made over the years by women at the Marshall Center.*

by **Mike Wright**  
**Marshall Center Historian**

**W**omen engineers at Marshall have and continue to pave the way for others to follow, both inside and outside of NASA.

**Barbara S. Askins**, a chemist in the Astronomy Branch of Marshall's Space Sciences Laboratory, was named National Inventor of the Year in 1978. Askins invented an improved method for intensifying the image on photographic films and plates after they were developed.

In the 1970s, Marshall broadened its involvement in space science with projects like the Gravitational Redshift Probe (GP-A), Laser Geodynamic Satellite (LAGEOS), and Large Space Telescope, later renamed the Hubble Space Telescope. One of the engineers involved in those projects was **Anne B. Folsom**, who served as lead engineer for the Reliability and Quality Assurance

Office in Marshall's Science and Engineering Directorate. Folsom earned a degree in mathematics and history at the University of Mississippi and went to work as an instructor in radar systems at Keesler Air Force Base. Later, she joined the Army Ballistic Missile Agency in Huntsville and transferred to the Marshall Center when it was formed in 1960.

**Patricia D. Brandon** also transferred to Marshall from the Army Ballistic Missile Agency after earning a bachelor of science degree in mathematics from the University of Chattanooga. During the Saturn era, she worked as an aerospace engineer in the development of guidance systems. As the era of the Shuttle approached in the late 1970s, Brandon produced computerized math models in support of Spacelab ground and flight operations. She began work in the Mass Properties group in the Systems Analysis and Integration Lab.

**Jeanette F. Reisz**, a mathematician at Marshall, was also involved in computer applications. Reisz was assigned to the Navigation and Control Systems Branch in Marshall's Preliminary Design Office  
*See Women's History page 5*

## NCMA Second World Congress to Be Held At Von Braun Center March 29 to April 1

**T**he National Contract Management Association's (NCMA) Second World Congress will be held in Huntsville March 29 to April 1 at the Von Braun Center.

The Congress will feature over 200 concurrent sessions presented by representatives of aerospace firms, government agencies, and other organizations. The presentations will cover the full range of disciplines and activities involved in the federal acquisition process. Marshall has 11 presentations scheduled for the Congress on topics including: NASA's Microgravity Research Program; Communicating Scientific Knowledge at NASA; NASA Acquisition Internet Service; the Integrated Financial

Management Program; and NASA's Consolidated Contracting Initiative.

There will also be several plenary sessions featuring speakers such as U.S. Representative Bud Cramer (D, Fifth Congressional District of Alabama), Kent Kresa, chairman of the board, president, and CEO of Northrup Grumman Corp. (invited), and Dee Lee, NASA's associate administrator for procurement.

Attendance can be for a day(s) or for the full three and one-half days. For detailed information concerning World Congress '98 activities and registration information, visit the World Congress web sites at "www.worldcongress98.org" and "www.ncmahq.org/congress.html", or contact Emil Posey at 4-0430.

# Marshall's Chief Information Officer Answers Questions

*Editor's note: The article which follows is the second of a two-part look at proper usage of government-furnished information technology.*

**M**arshall employees and contractors are encouraged to continue to learn about information technology systems and devices such as computers, networks, communications infrastructure, and fax machines and use these valuable assets to help accomplish their work. It is important to remember that, like all other forms of government property, Marshall information technology resources are provided for official business only. The following questions and answers will help assure proper use of government-furnished information technology.

**Q: I'm a contractor employee. Do these guidelines apply to me?**

**A:** Yes. Anyone who uses Marshall information technology resources which include computers, networks, telephones, voice mail, electronic mail, fax machines and other electronic information transfer devices is subject to these guidelines.

**Q: How is using the Internet and e-mail at work different from using it at home?**

**A:** The obvious answer to this question is that tax dollars are paying for the services you use at work. These services are provided for official government business

only. They are not for personal use, even during non work hours. Each time you use Marshall information resources to send e-mail, an electronic "return address" is automatically recorded. Additionally each time you access the Internet, IP addresses or names can be recorded by the places you visit. These IP addresses and names are associated with Marshall. This necessarily creates the impression that you are representing NASA—just like using NASA letterhead to send a note.

**Q: What is "official business"?**

**A:** Broadly speaking, official business includes any work directly related to your job. For example, if you need to write a technical paper for a NASA-sponsored symposium, using the Internet to gather information would clearly be considered official business. If you're not sure if an activity is work related, you should ask your supervisor for guidance.

**Q: May I use my computer for other activities indirectly related to my job?**

**A:** In some circumstances, you may use your computer for activities that are not directly related to your job, but they must have a clear relationship to NASA business. For example, e-mail messages involving a Marshall-sanctioned event such as a symposium, class or presentation are allowed. E-mail involving Center-

sponsored activities, such as a Marshall Blood Drive or Child Care are also allowed. Staff organizations may use e-mail to distribute information on events or activities specific to that organization.

**Q: I'm taking a training course in the evenings. May I use Marshall computer resources to do my homework?**

**A:** If you are taking a course that is clearly work related and if your supervisor approves, you may use Marshall computer resources to write a report or do similar course work on a non interference basis (e.g. during non work hours and as long as your course work does not interfere with or delay the performance of any official business of the organization).

**Q: May I use e-mail to transmit chain letters that are for benevolent causes?**

**A:** No. You may not use e-mail to transmit chain letters.

**Q: May I use e-mail to advertise club meetings, professional associations, community activities, charity events or other worthy causes that are not sponsored by Marshall?**

**A:** No. You may not use e-mail to advertise events that are not related to official business. However, because knowledge of these events and activities can be beneficial to employees, Marshall

*See Information Technology page 4*

## Lower-Cost Access to Space

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thermal protection systems, ground and flight operations, and cryogenic tanks that hold liquid propellants at super cold temperatures. Propulsion systems technologies will include main engine components and subsystems for chemical and electric propulsion systems.

"NASA wants to take a look at alternative approaches and options for developing the most promising technologies to get to space for less money," Hueter said. "This work is designed to broaden the technology base."

Awards are scheduled in June. Anticipated funding for the awards in fiscal year 1998 is \$3.9 million, with projected funding of about \$60 million through fiscal year 2000. Funding is dependent upon the number and content of selected proposals and availability of funds.

NASA Research Announcement 8-21 is available via the World Wide Web at <http://nais.msfc.nasa.gov/msfc/home.html> by selecting "business opportunities" and following online instructions.



Marshall's Dr. Jan Rogers (right) briefs visitors from the Space Agency Delegation in the Ukraine during a tour of the Center last week. Shown with Rogers are from left, Dr. Sandor Lehoczky, ES71, Sergiy Kavelin, Petro Podo Plelov, interpreter Nadia Koroler and Oleg Fedorov.

*Photo by Adeline Byford*



# Marshall Exhibit in Spotlight at Chicago

by Joy Carter

A NASA exhibit — provided and staffed primarily by Marshall people — was a star attraction at the National Manufacturing Week Conference in Chicago last week. Nearly 25,000 people walked through exhibit, showcasing the latest in NASA technology.

The exhibit featured a walk-through mock-up of an International Space Station science laboratory and crew's living quarters. Visitors also viewed four displays representing Marshall-managed programs — the Reusable Launch Vehicle, Advanced Space Transportation, Microgravity and Technology Transfer. The Jet Propulsion Laboratory in Pasadena, Calif., presented an exhibit on the Mars Pathfinder program.

"Together, the coordinated exhibit was designed to demonstrate some of NASA's leading edge programs — many of which are Marshall-managed — whose technologies could find their ways into the industrial and consumer sectors in the near future," said John Dumoulin, Marshall exhibits manager.

During the conference, Technology Transfer representatives gathered 285 leads for possible future NASA

partnerships with business and industry. A presentation given on friction stir welding, a new process developed by Marshall engineers for joining materials without melting them, created 75 leads for future partnerships. Also, Sally Little, director of Technology Transfer at Marshall, presented a session on "NASA Technology at Work With American Industry."

Officials of the convention proclaimed March 18 as "Space Exploration Day." With the help of Marshall exhibitors, they organized special events for trade media, exhibitors and members. Four NASA Commercial Space Center program directors conducted a panel discussion of "Space Technology and Its Application to Industry."

"The four panelists noted the importance of NASA's presence at the conference and the unique opportunity it provided to demonstrate the potential for commercial applications of microgravity research to the nation's industrial design and engineering leaders," said Dan Woodard, Microgravity Outreach Program manager at Marshall, who staffed Microgravity's exhibit at the show.

Approximately 65,000 manufacturing professionals attended the event.

## Information Technology

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is developing electronic bulletin boards where employees can post and access such information. A separate announcement will be issued soon with specific instructions for posting to and accessing electronic bulletin boards at Marshall.

**Q: Are my computer transactions private?**

**A:** No. You should have no expectation of privacy when using Marshall information technology systems and should not use them to send, receive, or store any information that you want to keep private. Additionally, when you send e-mail, it is difficult to ensure that your message is secure. For this reason, you should also avoid sending sensitive information using Marshall information technology systems unless you are using a system that has

been specifically approved for that purpose.

**Q: Who can look at my computer transactions?**

**A:** Managers, supervisors, and other authorized individuals may look at any information in your computer system or accounts at any time. Additionally, computer security personnel may examine transactions. Under certain circumstances, Marshall may be required to provide computer information to outside parties such as law enforcement officials.

**Q: Where can I get more information?**

**A:** If you have questions concerning use of computer resources, contact your supervisor, the Information Systems Services Office at 4-5773, the Chief Information Officer at 4-5697, or the Marshall Information Technology Security Coordinator at 4-1223.

## Submit Suggestions Online Through IDEAS

Marshall's Innovative Dynamic Employee Active Solutions (IDEAS) system is an alternative to the formal suggestion program and the best way to submit your idea to be considered for implementation.

The IDEAS system is available online by accessing the Inside Marshall home page at [www.msfc.nasa.gov/inside](http://www.msfc.nasa.gov/inside).

Click the IDEAS button and complete the form. Your name and organization are optional. Your idea will immediately be sent via e-mail to the Employee Committee, who will coordinate your idea with appropriate organization(s) or personnel to get your idea implemented or determine the need for further evaluation. Concurrently, you can conveniently monitor the status of your idea by clicking the "View Recent Ideas" button on the Inside Marshall page.

## Students

*Continued from page 1*

Instructional materials for the course consisted of lesson plans, view-graphs, reference materials, work sheets and a course examination. Both science and mathematics courses were taught at Sparkman during "Space Week" and the course materials will be available through the Space Environments and Effects Program's web-server at <http://see.msfc.nasa.gov> and other appropriate educational websites, as a resource package for other high school teachers around the country.

"We at NASA seek ways to involve the educational community in our endeavors to inspire America's students, and create learning opportunities," explained Steve Pearson, manager of NASA's Space Environments and Effects program. "As we go about developing advanced technologies concerning the space environment, we hope to contribute to the education process and inspire our children, who will be our future designers and operators of America's spacecraft."

## Upcoming Events

### Earth Day T-shirts Available From NASA Exchange

Earth Day T-shirts can now be ordered from the NASA Exchange in Building 4752. Order forms are also available on-line via Marshall Center's Earth Day website at [http://www.recycle.msfc.nasa.gov/earth\\_day/earth\\_day.html](http://www.recycle.msfc.nasa.gov/earth_day/earth_day.html). The Marshall Recycling Committee congratulates Maureen Hunt of DP Associates for this year's T-shirt logo! She will receive \$50 for her winning entry. The deadline for T-shirt orders is Tuesday, March 31. The annual celebration of Earth Day culminates on April 22.

### Marshall's Open House '98 Only Seven Weeks Away

The Marshall Center Open House is scheduled for 9 a.m. to 6 p.m. May 16. Visitors will be able to see a host of exciting activities.

The official homepage for Marshall's Open House is up and running. Visitors to the site can volunteer for the event. Retirees interested in volunteering should call Billie Swinford at 4-0087.

The web address is: <http://www.msfc.nasa.gov/openhouse/> or for more information on the Open House, visitors may call 1-888-901-NASA.

### Volunteers Needed for Great Moon Buggy Race April 18

The Great Moon Buggy Race will begin at 8 a.m. Saturday, April 18 at the U.S. Space & Rocket Center.

Volunteers, including family members 10 years of age and older, are needed to serve as judges, runners and timers. Those who support the event will receive lunch and a free T-shirt. For more information contact Tammy Rowan at 4-8706 or by e-mail at: [tammy.rowan@msfc.nasa.gov](mailto:tammy.rowan@msfc.nasa.gov).

## Women's History

*Continued from page 2*

in Program Development. Her work included computer programming of spacecraft advanced guidance, navigation and control systems. Reisz had earned a bachelor of science degree in mathematics from Delta State College in Cleveland, Miss.

**Jeanette A. Scissum** joined Marshall in 1964 after earning a degree in mathematics from Alabama A&M University. In the mid-1970s she was working as a space scientist in the Space Environment Branch of the Center's Space Sciences Laboratory developing space environment models from which predictions could be made on the life expectancy of satellites.

Physicist **Mona Hagyard**, who earned a doctorate, also served as an expert in space science and was a principal investigator on the Solar Maximum Mission in the 1980s. She came to Marshall in September 1967 upon completion of her doctorate in physics at the University of Kentucky. She joined the Research Projects Lab (now Space Sciences Lab) to work on the Apollo Telescope Mount (ATM) solar experiments.

Shortly after joining Marshall, Hagyard became involved in Marshall's Solar Vector Magnetograph project which was started in conjunction with the Naval Research Laboratory to provide support for the ATM mission. This instrument became internationally recognized during the Solar Maximum Mission (SMM) era and has provided pioneering research in solar magnetic fields. Hagyard was a guest investigator for the SMM, the Compton Gamma Ray Observatory, and PI on a number of supporting research and technology grants and Center Director's Discretionary Fund programs. She became Team Leader of Marshall's Solar Observatory in 1980, directing the day-to-day operations of the facility. Her main

areas of research include the interpretation and analysis of solar vector magnetograph data, radiative transfer in magnetic fields, modeling of solar magnetic fields, and investigations of the role of magnetic fields in various manifestations of solar activity.

**Ellen M. Williams**, who earned a degree in mathematics from the University of Alabama, Tuscaloosa, worked in the mid-1970s in the Computer Systems Branch of the Huntsville Computer Complex.

**Frances E. Scott**, a biologist at Marshall, started her career in government as a secretary at the Center. She eventually earned a bachelor of science degree in biology from

Athens College in Athens, Ala. Later she served as a biologist in the Biotechnology Branch of Marshall's Materials and Processes Laboratory. She was a specialist in sterilization methods for planetary quarantine and an investigator for the red blood cell portion of an electrophoresis experiment conducted in 1975 the Apollo-Soyuz Test Project.

By the late 1970s, Marshall's women scientists and engineers were becoming involved in activities that took them outside the laboratory walls. **Sally Little**, who had earned a bachelor of science in engineering science and mechanics from the University of Tennessee, worked as an engineer in Marshall's Materials and Processes Laboratory. Part of her work, however, included experiencing brief periods of near-weightlessness during flights of a NASA KC-135 aircraft. The experience was designed to test the loading and dispensing activity of apparatus for a Spacelab experiment.

As Marshall moved into the Space Shuttle era and beyond, many of its women engineers and scientists would move into high profile activities, most notably Marshall engineer **Jan Davis** who has been a NASA astronaut since her selection in the late 1980s.

*By the late 1970s, Marshall's women scientists and engineers were becoming involved in activities that took them outside the laboratory*

## Employee Ads

### Miscellaneous

- ★ 22 HP Kubota Tractor 60" Landscape box, 48" finish lawn mower, \$4,000. 656-4509
- ★ Solar hot water panels and tanks. Call 931-0351 after 5 p.m.
- ★ Wood heater, Ashley with some wood \$150; Exercycle Pro-sport 175, \$25. 586-7424
- ★ Glaspar 17ft. runabout, 115HP Johnson w/power trim, walk-thru windshield, depth finder, \$1,450. 883-8257
- ★ MacIntosh Powerbook 1400cs, 117 mhz, 44MB memory, 750MB HD, 33.6kb modem, G3 upgradable, \$1,250. 232-2696
- ★ Large blue La-z-boy swivel rocker recliner, \$105; blue couch, \$100; Hoover upright vacuum, \$15. 721-0617
- ★ Six inch Rockwell jointer with stand, \$250. 852-7180
- ★ Minnkota Turbo Pro 812 autopilot trolling motor 42 lbs. thrust, less than 20 hours, \$300. 922-1169
- ★ French provincial white twin poster bed, dresser, mirror, \$300. 883-5168
- ★ MTD lawn tractor, 12HP, 38" cut, \$350; power lift for OB motor, \$250. 837-4136
- ★ Country blue and cream comforter bedskirt, pillow shams, full size, \$45. 306-0365
- ★ 2 MacIntoshes, Performa 475 with 13" color monitor, \$345; SE30 with padded case, \$170; double-wide steel garage door, \$150. 778-9149

### Vehicles

- ★ 1996 Blazer LS, 4-door, 38K miles, \$18,500 o.b.o. 931-5288
- ★ 1996 Camry LE, factory warranty, 28K miles, power, \$15,000. 837-3746
- ★ 1989 Mazda 323, 83.6K miles, A/C, AM/FM cassette, 4-speed manual. 880-6794
- ★ 1981 Ford F150 long bed, A/C, P/S, \$2,250. 837-0085
- ★ 1982 Toyota Corolla station wagon, one owner, engine needs timing belt, never wreck, \$700. 880-8106
- ★ 1989 Honda Prelude, 5-speed, A/C, P/S, moonroof, AM/FM cassette, one owner, \$4,500. 895-8363
- ★ 1992 Grand Voyager, new tires, new transmission, 104K miles, \$7,000 o.b.o. 721-1980
- ★ 1991 Ranger XLT Supercab, V-6, 5-speed, A/C, bedliner, sport wheels, 90K miles, \$5,800. 880-9025
- ★ 1991 Buick LaSabre, 4-door, P/B, P/S, A/C, C/C, \$4,000 o.b.o. 796-6934
- ★ 1997 Ford Expedition XLT, 5.4L, tow package, leather, 3rd seat, 18K miles, \$27,950. 536-0033
- ★ 1995 Dodge Grand Caravan, dual air, all options, \$11,125. 837-0085

### Wanted

- ★ Canoe for less than \$500. 859-8221
- ★ Palm pilot personal. 883-2085

### Lost

- ★ Allison McNally from NASA Headquarters lost a gold bracelet in the 4200 or 4203 area. 544-9171
- ★ Gold hoop earring lost in building 4203 March 16. 498-3640

# MARSHALL STAR

Marshall Space Flight Center, Alabama 35812

The Marshall Star is Published every Wednesday by the Public Affairs Office at the George C. Marshall Space Flight Center, National Aeronautics and Space Administration. Contributions should be submitted no later than Friday noon to the Marshall Public Affairs Office (CA10), Building 4200. Submissions should be written legibly and include the originator's name. The Marshall Star does not publish commercial advertising of any kind.

Writer-Editor - Angela D. Storey  
Editorial Assistant - Betty Humphrey  
Director, Media Services - David B. Drachlis  
Director of Public Affairs - John B. Taylor  
U.S. Government Printing Office 1998-633-111- 80002

## Center Announcements

- ★ **Spring Dinner Dance** — Tickets for the April 11 Dance are now on sale by the MARS Ballroom Dance Club. The semi-formal event will be held in the VBC West Hall and will feature ballroom music by the Barry Orth Orchestra. Social will begin at 6:30 p.m., and a buffet dinner will be served at 7 p.m., followed by dancing from 8 to 11:30 p.m. Tickets are \$18 per person. Paid-up members get a \$3 discount and a free ticket for each ticket purchased. They are available from Tamara Landers (4-6818), Pat Sage (4-5427), Ed Ogozalek (837-1486), Linda Kinney (4-0563), and Bob William (4-3998). Reservations for a table of 8 can be made by calling Woody Bombara (650-0200).
- ★ **NASA Job Fair** — NASA's Ames, Stennis, Goddard, and Langley Centers will participate in an on-site job fair to be held in MSFC's CTAP Center, Bldg. 4200, room G-13, March 30-31 and April 1. Each Center will recruit for a variety of vacancies, accept applications and interview interested NASA employees. Planned activities vary, contact the CTAP Center at 5-1354 (961-1354 if dialing off-site) for more information.
- ★ **Technology Transfer** — Information about Marshall's Technology Transfer program is now available in a newly revised format, located at <http://www.nasasolutions.com>. The Technology Transfer Office invites you to visit this updated website and e-mail any comments, questions, or suggestions to [Techmail@msfc.nasa.gov](mailto:Techmail@msfc.nasa.gov).
- ★ **Training Opportunity** — The Program/Project Management Initiative announces the third Project Management Shared Experiences Program course "Creative Approaches in Project Management" will be held April 20-24 at the Ramada Inn Hagerstown, MD. Target audience is personnel with at least five years of project management experience and expected involvement in project management for the next five years. If interested contact Sherry Douglas at 202-554-8677 ext. 27 or e-mail at [sdouglas@tadcorps.com](mailto:sdouglas@tadcorps.com).
- ★ **Dry Cleaners** — The laundry, dry cleaning and shoe repair drop-off service located in room G-37, building 4200 will close operations on April 8. New items will not be accepted after April 1 and all claims should be settled with the concessionaire prior to April 8. The NASA Exchange regrets any inconvenience to Marshall employees caused by this action.
- ★ **MARS Tennis Club** — The MARS Tennis Club invites you to join us for an exciting year of tennis. The signup period starts now until April 12 for club membership, singles and doubles ladder competition. A two week challenge period is scheduled from April 12-26. Individual membership cost is \$18, whole family \$25 and persons to participate in a ladder \$10. Note to current members: First clean-up day is April 4 starting at 8:30 a.m. Contact Mike Moore at 4-7176, Bill Baker at 4-6686 or Tom Sutherland at 4-7704 for more information.
- ★ **Toastmasters Club** — The NASA Lunar Nooners Toastmasters Club will meet March 31 at 11:30 a.m. in the 4610 cafeteria conference room. All MSFC employees, contractors, and friends are invited to

attend. For more information, Call Debbie Hagar at 539-4499, or Lee Johns at 4-5142.

- ★ **NARFE** — The National Association of Retired Federal Employees - Decatur Chapter 736 will meet March 25 (4th Wednesday of each month) at 11 a.m. for lunch and 12 noon for the program and business meeting at Morrison's Cafeteria located at River Oaks Center. For further information call 773-4826 or 355-2874.
- ★ **MOO** — The Management Operations Office retirees will meet for breakfast/lunch on March 26 (4th Thursday each month) at the Cracker Barrel in Madison at 10 a.m. Retirees and all present or former MOO employees are welcome. Call 539-0042 if you have any questions.
- ★ **MARS Dance Club** — The MARS Ballroom Dance Club will offer Rumba and Single Swing lessons (\$10 per person) from 7 to 8 p.m. March 30. The classes will be held in the Parish Hall of Saint Stephen's Episcopal Church at 8020 Whitesburg Drive. For more information call Pat Sage at 544-5427; for a membership application, call Linda Kinney at 544-0563.
- ★ **Shuttle Buddies** — The Shuttle Buddies will meet for breakfast March 30 (last Monday of each month) at 9:15 a.m. at Shoneys, University West. For questions call Deemer Self at 881-7757.
- ★ **MARS Fishing Club** — The Fishing Club's next tournament will be April 4 at Decatur Boat Harbor. All MSFC employees, dependents, and contractors are invited to participate. Call John Pea at 4-8437 or Charlie Nola at 4-6367 for more information.
- ★ **Public Inquiries** — Please visit the Public Inquiries Office located in Bldg. 4200, room 101. Hot off the press is the multicolored brochure, "NASA Is". Read and learn how NASA is exploring new worlds, opening the space frontier, expanding the boundaries of flight, understanding our changing planet, and inspiring America's youth. Other publications and handouts related to Marshall and NASA are available.
- ★ **Annual Easter Egg Hunt** — The annual NASA Exchange-sponsored Easter Egg Hunt is scheduled for April 5 at 2 p.m. In case of rain, the event will be held April 11. Children of Marshall employees and on-site contractors may participate. Contact Gena Marsh, 4-0128 or Donna Mahieux, 4-7511.

## Job Opportunities

**CPP 98-14-CP, AST, Technical Resources Management, GS-801-13/14 (2 vacancies)**, Office of Chief Financial Officer, R&D Analysis Office. Closes March 31.

**CPP 98-16-CP, Supervisory Cost Accountant, GS-510-13/14**, Office of Chief Financial Officer, Accounting Operations Office, Cost Reporting & Analysis Division. Closes March 31.

**CPP 98-18-CP, Accounting Technician, GS-525-5/6/7 (2 vacancies)**, Office of Chief Financial Officer. Closes April 6.

**Reassignment Bulletin: 98-12-CV, AST, Aerospace Flight Systems, GS-861-14 (Multiple Vacancies)**, Microgravity Research Program Office, MSFC Microgravity Science & Applications Projects Office. Closes April 3.

BULK RATE  
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Permit No. G-27